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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ROBINSON, HOPE A	
ART UNIT	**PAPER NUMBER**
1656	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/006,922	LUKYANOV ET AL.	
	Examiner	Art Unit	
	Hope A. Robinson	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23,26-28 and 30-47* is/are pending in the application.

4a) Of the above claim(s) *26,28 and 30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23,27 and 31-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status Of The Application

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1656.

2. Applicant's response to the Office Action mailed February 9, 2005 on April 29, 2005 is acknowledged.

Claim Disposition

3. Claims 24-25 and 29 have been canceled. Claims 32-47 have been added. Claims 1-23, 26-28 and 30-47 are pending. Claims 1-23, 27 and 31-47 are under examination.

4. Applicant's amendments and arguments filed April 29, 2005 have been fully considered and are deemed to be persuasive to overcome some of the rejections and/or objections previously applied. Rejections and/or objections not reiterated from the previous Office Action are hereby withdrawn.

5. The following grounds of objection/rejection are or remain applicable:

Abstract

6. The abstract is objected to because of the following informalities:

The abstract discloses, "Nucleic acid compositions encoding novel chromo/fluoroproteins and mutants thereof, as well as the proteins encoded by the same, are provided", as this appears to be redundant. The statement that the "nucleic acid encodes novel chromo/fluoroproteins and mutants thereof" is sufficient.

Specification

7. The specification is objected to because of the following informalities:

(a) The specification is objected to because the priority information on page 1 needs to be updated. For example, application number 09/418,529 is now abandoned.

(b) On page 42 (lines 20-21) and page 51 (lines 3-6) the sequence notation is improper, see for example, "SEQ ID No.20" which should be "SEQ ID NO:20". Applicant is advised to check the entire specification.

(c) The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: "Nucleic Acids Encoding Chromo or Fluorescent Proteins and Methods For Using Same".

Correction of the above and compliance with the sequence rules is required.

Claim Objection

8. Claims 1-2, 6-9, 11-13, 16-21 and 31 are objected to because of the following informalities:

Claims 1-2, 8-9, 12-13, 16-21 and 40 are objected to because the species name in the claims is not italicized, for example *Cnidarian*.

Claims 6, 7, 11, 16, 18 and 20 are objected to because the claims recite an improper sequence notation, see for example, "SEQ ID No:11", which should be "SEQ ID NO:11".

For clarity and precision of claim language it is suggested that claims 6-7, 16, 18 and 20 are amended to recite "nucleotides" in lieu of "residues" as the art recognizes that 'nucleotides' are used to describe nucleic acids and 'residues' are used to describe amino acids.

Claim 31 is objected for the recitation of "a nucleic acid according to claim 1" instead of "the nucleic acid according to claim 1".

Correction of the above and compliance with the sequence rules is required.

Claim Rejections - 35 USC 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

9. Claims 16-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 16 and the dependent claim hereto are

drawn to a fragment of a nucleic acid, which reads on a product of nature as a fragment can exist in nature (i.e. naturally occurring mutation). The claims should be amended to indicate the hand of the inventor, for example the insertion of isolated or purified in connection with the nucleic acid fragment to identify a product not found in nature (see MPEP 2105).

Claim Rejections - 35 USC ∋ 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-23, 27 and 31-47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed invention is directed to a nucleic acid present in other than its natural environment that encodes a chromo or fluorescent protein or a mutant protein or a fragment of a nucleic acid or an isolated nucleic acid or mimetic thereof or a cell or a construct and expression cassette comprising same. The claims are also drawn to a nucleic acid present in other than its natural environment having a sequence similarity of at least about 40% to SEQ ID NO:11 and 40% sequence similarity to the encoded

protein in SEQ ID NO:12. Note that claims 1-5, 8-10, 12-15, 22-23, 27 and 31 are only defined by a function (encoding a protein). In addition, the encoded protein is a mutant thereof (see for example claims 12-15) and the claims do not define a reference point for the mutation as the protein is defined solely by its properties.

Additionally, the claimed invention is directed to fragments, mutants and mimetics of the claimed nucleic acid, which are not adequately described in the instant specification. For example, claim 6 recites a sequence that is substantially the same or identical to a nucleotide sequence of at least 10 nucleotides in length from SEQ ID NO:11, however, there is no indication as to whether it has to be 10 contiguous nucleotides or what region of the sequence is conserved and whether or not said fragment would have biological activity or remain fluorescent. In addition, claims such as claim 7 recites percent similarity, which only provides a partial structure. The instant specification fails to provide adequate description for the large genus encompassed in the claims. The claims encompass mutations other than point mutations or single deletions, which have not been described, therefore, the specification fails to provide a representative number of species for the claimed genus to show that applicant was in possession of the claimed genus. A representative number of species means that the species, which are adequately described, are representative of the entire genus. Therefore, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of nucleic fragments/mutants.

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to

practice, disclosure of drawings, or by disclosure of relevant identifying characteristics, for example, structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. In addition, the claims are directed to a sequence that is complementary or hybridizes under stringent conditions to the claimed nucleic acid sequence, however, the claims do not specifically point out what conditions are deemed as stringent or the function of the complement as the complement cannot encode the protein as claimed.

Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir.1991), states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in *possession of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed" (See *Vas-Cath* at page 1116). The skilled artisan cannot envision the detailed chemical structure of the encompassed genus of nucleic acid and the encoded polypeptides, and therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. *See Fiers v. Revel, 25 USPQ2d 1601 at 1606 (CAFC 1993).*

Therefore, for all these reasons the specification lacks adequate written description, and one of skill in the art cannot reasonably conclude that the applicant had possession of the claimed invention at the time the instant application was filed.

11. Claims 1-23, 27 and 31-47 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the nucleic acid set forth in SEQ ID NO: 11 that encodes the protein set forth in SEQ ID NO:12, does not reasonably provide enablement for any fragment, mutant or mimetic thereof or a transgenic organism or progeny thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The enablement requirement refers to the requirement that the specification describe how to make and how to use the invention. There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is undue. These factors include, but are not limited to: Quantity of Experimentation Necessary; Amount of direction or guidance presented; Presence or absence of working examples; Nature of the Invention; State of the prior art and Relative skill of those in the art; Predictability or unpredictability of the art and Breadth of the claims (see *In re Wands, 858 F.2d at 737, 8 USPQ2d at1404 (Fed. Cir. 1988*). The factors most relevant to the instant invention are discussed below.

The amount of experimentation required to practice the claimed invention is undue as the claims encompass an unspecified amount of fragments, mutants and mimetics. The claimed invention is directed to a nucleic acid present in other than its natural environment that encodes a chromo or fluorescent protein or a mutant protein or a fragment of a nucleic acid or an isolated nucleic acid or mimetic thereof or a cell or a construct and expression cassette comprising same. The claims are also drawn to a nucleic acid present in other than its natural environment having a sequence similarity of at least about 40% to SEQ ID NO:11 and 40% sequence similarity to the encoded protein in SEQ ID NO:12. Further, note that claims 1-5, 8-10, 12-15, 22-23, 27 and 31 are only defined by a function (encoding a protein). In addition, the encoded protein is a mutant thereof (see for example claims 12-15) and the claims do not define a reference point for the mutation as the protein is defined solely by its properties. No guidance is provided in the instant specification as to any special feature/characteristics or the structure of all the possible fragments, mimetics or mutants encompassed by the claims. Additionally, there is no indicia as to how much modifications can be tolerated in the wild type structures. Note that claims such as claims 12-15 do not recite the wild type structure for comparison. The claims encompass mutations that are not limited to a single point mutation and encompass a large variable genus. A skilled artisan would have to perform undue experimentation to construct the claimed mutant, fragment or mimetic absent guidance.

The instant specification does not demonstrate or provide guidance as to what the structure of the protein will be once modified based on the changes contemplated in

the claims and the instant specification (i.e. 40% sequence similarity or substantially similar). No definition is provided for the phrase, which could encompass 40% or 45% or 50% etc., and said nucleic acid might not encode the same protein or be functional. In addition, the claims are directed to a complement or sequence that hybridize under stringent conditions, which cannot or may not encode the same protein. In the instant application, the properties of the protein recited in the claims (see for example claim 1) and the recitation of a nucleic acid encoding such is insufficient to determine a chemical structure for the mutants/fragments/mimetics encompassed in the claims. Additionally, there is no data provided demonstrative of a particular portion of the structure that must be conserved. One skilled in the art would have to engage in undue experimentation to construct for example, a mutant thereof and then produce from this a chromoprotein or fluorescent protein that maintains the recited properties. Due to the large quantity of experimentation necessary to generate the infinite number of mutants/fragments/mimetics recited in the claims and possibly screen same for activity/desired properties and the lack of guidance/direction provided in the instant specification, this is merely an invitation to the skilled artisan to use the current invention as a starting point for further experimentation. Thus, undue experimentation would be required for a skilled artisan to make and/or use the claimed invention commensurate in scope with the claims.

Predictability of which potential changes can be tolerated in a protein's amino acid sequence and obtain the desired activity requires a knowledge of and guidance with regard to which amino acids in the protein's sequence, if any, are tolerant of

modification and which are conserved and detailed knowledge of the ways in which the protein's structure relates to its function. In addition, one skilled in the art would expect any tolerance to modification for a given protein to diminish with each further and additional modification, for example, multiple substitutions. In this case, the necessary guidance has not been provided in the specification. Therefore, while it is known in the art that many amino acid substitutions are possible in any given protein, the positions within the protein's sequence where such amino acid substitutions can be made with a reasonable expectation of success are limited, as certain positions in the sequence are critical to the protein's structure/function relationship. It is also known in the art that a single nucleotide or amino acid change or mutation can destroy the function of the biomolecule in many cases. For example, various sites or regions directly involved in binding activity and in providing the correct three-dimensional spatial orientation of binding and active sites can be affected (see Wells, Biochemistry, vol. 29, pages 8509-8517, 1990). It is in no way predictable that randomly selected mutations, such as deletions, substitutions, additions, etc., in the disclosed sequences would result in a protein having activity/properties comparable to the one disclosed. As plural substitutions for example are introduced, their interactions with each other and their effects on the structure and function of the protein is unpredictable. It is noted that the instant specification provides for example point mutations, however, the claims encompass plural substitutions, which are not exemplified, nor are there examples of all the possible mutant sequences. Thus, the skilled artisan would recognize the high

degree of unpredictability that all the fragments/mutants encompassed in the claims would retain the recited properties.

The state of the prior art provides evidence for the high degree of unpredictability as stated above. For example, Heim et al. (PNAS, vol. 91, pages 12501-04, 1994) disclose that a mutated DNA was sequenced and found to contain five amino acid substitutions, only one of which was found to be critical, Tyr66His, in the center of the chromophore. Heim et al. also disclose further site directed mutagenesis and noted that there was tolerance of the substitutions made, however, some mutants were weakly fluorescent (page 12504). Therefore, amino acid substitutions are critical to the protein's structure/function relationship.

The specification lacks adequate guidance/direction to enable a skilled artisan to practice the claimed invention commensurate in scope with the claims. Furthermore, while recombinant and mutagenesis techniques are known in the art, it is not routine in the art to screen large numbers of mutants/fragments/mimetics where the expectation of obtaining similar activity is unpredictable based on the instant disclosure. Moreover, the amino acid sequence of a protein determines its structural and functional properties, and predictability of what mutations can be tolerated in a protein's sequence and result in certain activity/property, which is very complex, and well outside the realm of routine experimentation, because accurate predictions of a protein's function from mere sequence data are limited, therefore, the general knowledge and skill in the art is not sufficient, thus the specification needs to provide an enabling disclosure.

The working examples provided do not rectify the missing information in the instant specification pertaining to the claimed mutants as the claims encompass mutants not described in the instant specification. Thus, one of skill in the art would have to engage in undue experimentation to construct the mutants of the claimed invention and examine the same for function/the specific properties.

The specification does not provide support for the broad scope of the claims, which encompass an unspecified amount of mutants/fragments. The claims broadly read on a whole organism and a transgenic cell or organism, for example a human for which no support is provided in the instant specification. The claims also read on any nucleotide sequence that is "about 40% or 60% similar or that hybridizes to the given sequence (SEQ ID NO: 11). The issue in this case is the breath of the claims in light of the predictability of the art as determined by the number of working examples, the skill level artisan and the guidance presented in the instant specification and the prior art of record. This make and test position is inconsistent with the decisions of *In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)* where it is stated that "...scope of claims must bear a reasonable correlation to scope of enablement provided by the specification to persons of ordinary skill in the art...". Without sufficient guidance, determination of having the desired biological characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily and improperly extensive and undue. See *In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988)*. Therefore, the instant specification to be enabling need to provide direction/guidance regarding whether the structure of the chromo or fluorescent fragment/mutant can

tolerate the modifications encompassed by claims and still possess the desired properties or whether a protein that does not have the desired properties may result. Absent sufficient guidance/direction one of skill in the art would not be able to practice the claimed invention commensurate in scope with the claims.

Thus, for all these reasons, the specification is not considered to be enabling for one skilled in the art to make and use the claimed invention as the amount of experimentation required is undue, due to the broad scope of the claims, the lack of guidance and insufficient working examples provided in the specification and the high degree of unpredictability as evidenced by the state of the prior art, attempting to construct and test mutants of the claimed invention would constitute undue experimentation. Making and testing the infinite number of possible mutants/fragments/mimetics to find one that has the desired properties as described is undue experimentation. Therefore, applicants have not provided sufficient guidance to enable one of skill in the art to make and use the claimed invention in a manner that reasonably correlates with the scope of the claims, to be considered enabling.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

12. Claims 6-7, 14-23 and 27 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter, which applicant (s) regard as their invention.

Claim 6 is indefinite for the recitation of "substantially the same" because it is unclear how to quantify this amount over a sequence that is at least 10 nucleotides in length from SEQ ID NO:11, wherein the sequence does not have to be contiguous. Additionally, the specification does not provide a definition as to what is intended, thus, the metes and bounds of the claim is indefinite. The dependent claim hereto is included because it does not rectify the deficiency.

Claims 6-7, 16, 18 and 20 lack clear antecedent basis for the recitation of "at least 10 residues in length" because the instant specification discloses "at least about 18 nucleotides or 30 nucleotides".

Regarding claims 14-15 the claims are indefinite because the claims recite the comparison of a wild type protein, however, the independent claim does not recite the derivation of the wild type protein or its structure, in fact the claim only recites a mutant. Furthermore, claim 15 recites "at least one deletion" which can be interpreted as a least 50 or more deletion, thus, the entire sequence could be deleted.

Claim 16 is indefinite for the recitation of "a fragment of the nucleic acid", as it is unclear which nucleic acid is referred to. It is suggested that the claim is amended to recite "a fragment of a nucleic acid". The dependent claim hereto is included as it does not rectify the deficiency.

Claim 18 is indefinite for the recitation of "hybridizes under stringent conditions" as the claim does not provide the conditions considered to be "stringent" and the art recognizes that hybridization conditions can vary, for example the wash conditions. Further, the claim is indefinite for the recitation of "its complementary sequence" as the

complement cannot encode the claimed protein. It is suggested that the claims is amended to recite "full complement". The claim is also indefinite for the recitation of "substantially the same" as it is unclear how much is considered to be "substantially the same". The dependent claim hereto is also included in this rejection because it does not rectify the deficiency. See also claims 20-21 where the same language appears as in claim 18.

Claims 22 is indefinite for the recitation of "selected from the group consisting of" as item (b) does not provide a Markush list, it only provides "nucleic acid". The dependent claim hereto is also included as they do not rectify the situation.

Claim 27 is indefinite because the claim represents an improper Markush claim, see where, "selected from the group consisting of a nucleic acid" is recited in the claim. A proper Markush claim consists of "A, B and C" or "A, B or C".

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-5, 8-10, 12-23, 27 and 31 rejected under 35 U.S.C. 102(b) as being anticipated by Anderluh et al. (Biochemical and Biophysical Research Communications, vol. 220, pages 437-442, 1996), based on the broad recitation of a nucleic acid present in other than its natural environment and encodes a chromo or fluorescent protein and is from *Cnidarian* species.

Anderluh et al. teach a cDNA and the protein product derived from Sea anemones (order *Actiniaria*, class *Anthozoa*, phylum *Cnidaria*). Anderluh et al. disclose cloning, sequencing and expression in *E. coli* of a gene encoding Equinatoxin II, which is a cytolysin from the anemone *Actinia equina*. As the reference teaches the same class and phylum the properties recited in the claims are inherent and Equinatoxin II is known in the art to be fluorescent. Therefore, the limitations of the claims are met by the reference.

Response to Arguments:

14. Applicant's response filed on April 29, 2005 has been considered. Note that the rejections of record have been withdrawn except for the art rejection. However, also note that new grounds of rejections have been implemented based on the reasons set forth above. Applicant's arguments pertaining to the rejection under 35 U.S.C. 112, first paragraph written description were considered, however, do not address the issues raised in the new grounds of rejection under this statue.

Applicants argue that the claims are anticipated by the Anderluh et al. reference because the conventional/art recognized definition of fluorescent proteins refer to a protein having a plurality of residues that interact together as a fluorophore, and does not include all proteins that include tryptophan residues that may give rise to residue intrinsic fluorescence. This argument is not persuasive. The claims are not limited to fluorescence that only results from a fluorophore. Applicant is reminded that the limitations of the specification cannot be read into the claims. The broadest reasonable

interpretation has been applied to the claims, which broadly recite a nucleic acid present in other than its natural environment that encodes a chromo or fluorescent protein. The reference reads on the claims as no structure is provided for the claimed nucleic acid or protein and the claim is written in the alternative. Furthermore, the reference discloses a *Cnidarian* species that is *Anthozoan,* thus, the properties are inherent. Therefore, the reference is relevant and the rejection remains. This response is deemed responsive to the arguments raised on pages 11-12 of the amendment filed on April 29, 2005.

Conclusion

15. No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hope A. Robinson whose telephone number is 571-272-0957. The examiner can normally be reached on Monday-Friday from 9:00 a.m. to 6:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr, can be reached at (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hope Robinson, MS
Patent Examiner 6/30/05